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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,460	10/01/2003	Keiji Kanao	2635-181	5535

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EXAMINER

GUHARAY, KARABI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

E/C

Office Action Summary

Application No.

10/674,460

Applicant(s)

KANA O ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/1/03</u> . | 6) <input type="checkbox"/> Other: ____. |

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

In this case, abstract is more than 150 words. Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities:

- (1) On page 2, line 6, "benn" should be changed to "been".
- (2) On page 4, line 22, "tree" should be changed to "three".
- (3) On page 6, line 25 "hausing" should be changed to "housing".
- (4) On page 11, line 24, "umber" should be changed to "number".
- (5) On page 12, line 3, "aver-all height" should be changed to "over-all height".

Appropriate corrections are required. Applicant is advised to look into the disclosure and correct any other typographical errors present in the disclosure.

The drawings are objected to because Fig 4 states "aver-all height" which should be changed to "over-all height".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

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number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because of the following informalities:

In claim 1, line 12, applicant recites "engine", in order to have proper antecedent basis format, it should be "the engine" so as to refer back "an engine", recited in line 4. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Teramura et al. (US 6489709).

Regarding claim 1, Teramura discloses a spark plug (Fig 1) comprising a cylindrical metal member (metal shell 1) with a screw (having threaded portion 7, see Figs 4a-4c) for screwing in said metal member into an engine (SH is the cylindrical head of an combustion engine), a center electrode (3) fixed inside the metal member (1) through an insulator (2) and an earth electrode (ground electrode 4) welded to the metal member for forming a spark gap (g) together with the center electrode and a gasket (70) around an outer surface of the metal member for sealing between the metal member and the engine head (see line 66 of column 5- lines 40 of column 6), wherein the gasket (70) is bent at two positions (see Fig 11A-11b) and discloses materials such as SUS 301 & SUS 304, having chromium content about 20 wt% (lines 10-21 of column 10), thus having Vicker hardness of greater than or equal to 200 to less than or equal to 400, by the inherent property of such alloy.

Regarding claim 2, Teramura et al. disclose that the gasket is made of an Fe alloy with Cr content of greater than or equal to 15 wt % and smaller than or equal to 40wt %(lines 10-21 of column 10).

Regarding claim 3, Teramura discloses a spark plug (Fig 1) comprising a cylindrical metal member (metal shell 1) with a screw (having threaded portion 7, see Figs 4a-4c) for screwing in said metal member into an engine (SH is the cylindrical head of an combustion engine), a center electrode (3) fixed inside the metal member (1) through an insulator (2) and an earth electrode (ground electrode 4) welded to the metal

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member for forming a spark gap (g) together with the center electrode and a gasket (70) around an outer surface of the metal member for sealing between the metal member and the engine head (see line 66 of column 5- lines 40 of column 6), wherein the gasket (70) is bent at three positions (see Fig 4a-4c) and is of an Fe alloy with Cr content of greater than or equal to 15 wt % and smaller than or equal to 20 wt % (lines 10-21 of column 10).

Regarding claim 4 & 5, Teramura et al. disclose that the plate thickness of the gasket is greater than or equal to 0.2mm and smaller than or equal to 0.4mm (lines 43-45 of column 10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teramura et al. as applied to claim 1 & 3.

Regarding claims 6-7, Teramura et al. disclose all the limitations of claims 6 & 7 except for the limitation that the engine generates vibration greater than 10G.

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Teramura is silent about the vibration of the engine however mention that the applied force on the gasket being about 73Kgf / mm² (see claim 2 in column 12) which is caused by the vibration of the engine (lines 14-39 of column 8), it would have been obvious to one having ordinary skill in the art at the time the invention was made to have an engine generating vibrations greater than 10G, since it has been held that discovering an optimum value of a result, effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Further it is noted that prior art uses same structure and material for the gasket in the interface between engine and the spark plug, as in claimed invention, thus, it would obviously be used to the engine which generates vibration greater than 10G, as in case of claimed gasket.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karabi Guharay
Karabi Guharay
Patent Examiner
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